

What do dogs and football player have in common?

By Barbara Brown



Football player's knees are frequently injured due to the forces of twists and turns while running. The anterior cruciate ligament (ACL) is the most commonly injured ligament in a football player's knee. This is also true for your dog. Tearing an ACL results in pain and lameness and if left untreated an ACL injury can lead to debilitating arthritis. Obese animals are at greater risk for suffering an ACL injury as are certain breeds including the Rottweiler, Cocker Spaniel, Labrador Retriever, and German Shepherd. To understand what happens in an ACL injury, let's consider the construction of a dog's knee.

Canine knees and human knees are built somewhat differently. The dog's knee joint (also called the stifle) connects three bones: the femur, which extends from the hip to the knee; the tibia, which extends from the knee to the ankle; and the patella, or kneecap. Ligaments join these bones together. The ligaments are designed to prevent the femur and tibia from sliding back and forth across each other.

Diagnosis

A sudden rupture of the ACL may occur during exercise that involves jumping or running through a suddenly changing terrain or stepping in a hole while running. If your dog suddenly pulls up lame, is reluctant to put weight on one of his rear legs, or sits crookedly, you should have him checked by your vet for ligament injury. Dogs with chronic injuries generally exhibit an intermittent weight-bearing lameness, muscle atrophy, thickening of the joint and joint instability. Your vet will make a diagnosis of a ruptured cruciate ligament by assessing movement of the joint and with X-rays. During the physical examination, your veterinarian places one hand around the femur and one around the tibia in a precise manner. By applying pressure on the knee, the veterinarian will feel the bones move. Your vet is looking for an abnormal movement in what is called a drawer sign to indicate a torn ligament.

Treatment

For dogs, and especially larger ones, the recommended treatment for ACL injury is surgery. Most local veterinarian's offices are not equipped for this surgical procedure and some types of ACL surgery require veterinarian's with special certification. Therefore, your vet will probably refer you to a specialty clinic to confirm the diagnosis and perform the surgery.

There are four procedures that are available for surgically treating ACL injuries: intracapsular stabilization, extracapsular stabilization, a patented procedure called the Tibial Plateau Leveling Osteotomy® (TPLO), and tibial tuberosity advancement. Below is a brief description of each procedure:

Intracapsular ligament replacement involves transplanting tissue from other parts of the dog's body, or replacing the ACL with a synthetic graft made from materials such as Gore-Tex® or ligament from a tissue bank.

Extracapsular stabilization stabilizes the knee joint, using a fibrous sheet of tissue surrounding the muscles on the outside of the leg, nylon or other suture material, or steel wire. Fibular head transposition is an extracapsular technique that allows another ligament in the knee joint, the lateral collateral ligament, to replace the function of the cranial cruciate ligament.

Tibial Plateau Leveling Osteotomy® (TPLO) is a technique developed by Dr. Barkley Slocum that utilizes a different approach to treating cranial cruciate ligament injury. TPLO® eliminates opposing forces on the knee by changing the anatomy of the knee joint. This procedure requires that a bone cut be made in the tibia, which is then stabilized with a specialized bone plate. Only veterinarians that have been trained and licensed by the developer of the technique are permitted to perform this surgery.

A new surgical procedure, the Tibial Tuberosity Advancement (TTA) was developed at the University of Zurich by Dr. Slobodan Tepic and Professor Pierre Montavon. TTA is designed to stabilize the joint by shifting the cross-over point, the angle between the patellar ligament and the tibial plateau, towards full extension. It is accomplished by moving the tibial tuberosity (the projection, especially one at the end of a bone where it attaches to a muscle or tendon) forward a predetermined distance so that the patellar ligament is at 90 degrees to the tibial plateau.

Recovery

Veterinarians universally agree that the successful outcome of ACL surgery is contingent on the owner's strictly maintaining a schedule of rest and recovery. Your pet must have little exercise for 8 to 10 weeks following surgery. You should take care that your dog does not go outside off his leash; that he does not walk on slick surfaces and that stair climbing is minimized. But, take heart, the recovery rate, if instructions are followed, exceeds 90%.

Your dog will usually spend two days at the clinic for surgery and recovery from the anesthetic. In the first few days following surgery, he will not be his usual energetic self and will probably be on antibiotics and pain medicine. He may also be off his feed although eating and drinking should return to normal levels within a couple days. Your dog will have a protective collar to keep his from bothering his incision. Although the collar may look uncomfortable, it is not and your dog will adjust quickly. However, you may want to do some accident proofing of breakable items on tables as the dog will be taking more space walking through a room than previously. The collar will remain on until the stitches are moved.

After the first week, your dog will likely be feeling fine and want to return to his normal activity pattern. This is a challenge to owners because you must limit his activity to allow healing to complete. If your pet is crate trained, using the crate most of the time will help limit his movement. Take your dog outside on his leash several times a day to relieve himself and then return him to his crate or rest area. You will also need to limit his contact with other pets in the household who may try to entice him to play.

After two weeks, your dog's stitches will be removed, he will be checked by the vet for progress, and his protective collar can be removed. His limited activity schedule should continue for the remaining weeks of his recuperation. At the end of eight to 10 weeks, the clinic will X-ray the knee again to confirm that your dog is good-to-go. You can then begin letting your dog increase his activity at a schedule that feels comfortable to him. Do not push your dog to do too much too soon. You may find that rehabilitation and swimming are good exercises to increase your dog's leg strength and movement.

If you would like a sense of other owner's experience with recovery from ACL surgery, you can read comments at [Yahoo Answers](#) including this one from Lacie, "Those two months are tough, but they go quicker than you think they will, and now our dog is running and playing like she used to with no problems or complications from the surgery. The only bad thing about lying around for 2 months was that we both gained some weight."